BRAIN RESEARCH BULLETIN

VOLUME 17 NUMBER 1 JULY 1986

CONTENTS

Articles

A new microcirculation chamber for inexpensive long-term investigations of nervous tissue in vitro.
THIEMANN, W., R. MALISCH and K. REYMANN 1

β-Funaltrexamine (β-FNA) and the regulation of body and brain development in rats.
ZAGON, I. S. and P. J. McLAUGHLIN 5

Segmental distribution of thyrotropin releasing hormone in rat spinal cord.
HARKNESS, D. H. and M. S. BROWNFIELD 11

Visual cortex controls retinal output in the rat.
MOLOTCHNIKOFF, S. and F. TREMBLAY 21

Projections of the mesencephalic locomotor region in the rat.
GARCIA-RILL, E., R. D. SKINNER, C. CONRAD, D. MOSLEY and C. CAMPBELL 33

Effects of maternal nicotine injections on brain development in the rat: Ornithine decarboxylase activity, nucleic acids and proteins in discrete brain regions.
SLOTKIN, T. A., N. GREER, J. FAUST, H. CHO and F. SEIDLER 41

Monosodium glutamate neurotoxicity: A sex-specific impairment of blood pressure but not vasopressin in developing rats.
CLOUGH, R. W., P. F. ARAVICH and C. D. SLADEK 51

Effects of tegmental lesions on lordosis and body weight in female hamsters.
FLOODY, O. R. and R. R. CRAMER 59

Uptake of serotonin into rat platelets and synaptosomes: Comparative structure-activity relationships, energetics and evaluation of the effects of acute and chronic nortriptyline administration.
SLOTKIN, T. A., W. L. WHITMORE, K. L. DEW and C. D. KILTS 67

Responsiveness of monkey preoptic thermosensitive neurons to non-thermal emotional stimuli.
HORI, T., T. KIYOHARA, M. SHIBATA, Y. OOMURA, H. NISHINO, S. AOU and I. FUJITA 75

Immunocytochemical localization of atrial natriuretic factor, galanin and calcitonin gene-related peptide within the rat interpeduncular nucleus.
HAMILL, G. S., G. SKOFITSCH and D. M. JACOBOWITZ 83

Peripheral course and intramucosal distribution of the laryngeal sensory nerve fibers of cats.
YOSHIDA, Y., Y. TANAKA, T. MITSUMASU, M. HIRANO and T. KANASEKI 95

Thy-1-like immunoreactivity in human brain during development.
GRANHOLM, A.-CH., P. ALMQVIST, Å. SEIGER and L. OLSON 107

Contents continued

Organization of central hyperthermic mechanisms in helium-cold hypothermic hamsters.
SIMPSON, C. W. and G. E. RESCH 117

Rapid Communication

Ethanol enhances GABA-induced ^{36}Cl-influx in primary spinal cord cultured neurons.
TICKU, M. K., P. LOWRIMORE and P. LEHOULLIER 123

Brief Communication

Effects of phenylpropanolamine on gastric retention in the adult rat.
WELLMAN, P. J., K. ARASTEH, J. L. RUDDLE and M. D. STRICKLAND 127

Laboratory Instrumentation and Computing

Separation of components of hippocampal field potentials by digital filtering on a PC-based microcomputer.
WILKISON, D. M. 129

BRAIN RESEARCH BULLETIN

VOLUME 17 NUMBER 2 AUGUST 1986

CONTENTS

Articles

Hypothalamic proline endopeptidase activity is not changed by various behavioral procedures.
DALMAZ, C., C. A. NETTO, N. VOLKMER, R. DIAS and I. IZQUIERDO ... 137

Diuretic and natriuretic action of rat atrial natriuretic peptide (6–33) administered intracerebroventricularly in rats.
ISRAEL, A. and Y. BARBELLA 141

The amine accumulation-producing capacity of 6-hydroxydopamine and its neurochemical specificity.
WILLIS, G. L. and G. C. SMITH 145

Effects of hypothalamic lesions on active sodium-potassium transport in the extensor digitorum longus muscles of hypokalemic rat.
KATAFUCHI, T., H. YOSHIMATSU, Y. OOMURA and N. AKAIKE 151

Entry of DSIP peptides into dog CSF: Role of physiocochemical and pharmacokinetic parameters.
BANKS, W. A., A. J. KASTIN, D. H. COY and E. ANGULO 155

Enkephalin-like immunoreactive neurons and fibers in the ventromedial hypothalamic nucleus.
INAGAKI, S., Y. KUBOTA, S. KITO, M. YAMANO and M. TOHYAMA 159

**Certain basilar pontine afferent systems are GABA-ergic:
Combined HRP and immunocytochemical studies in the rat.**
BORDER, B. G., R. J. KOSINSKI, S. A. AZIZI and G. A. MIHAILOFF 169

Comparison of the effects of hypercapnia on phrenic and hypoglossal activity in anesthetized decerebrate and decorticate animals.
MITRA, J., N. R. PRABHAKAR, M. HAXHIU and N. S. CHERNIACK 181

**Perinatal dietary supplementation with a soy lecithin preparation:
Effects on development of central catecholaminergic neurotransmitter systems.**
BELL, J. M., W. L. WHITMORE, T. COWDERY and T. A. SLOTKIN 189

Distribution of PNMT-immunoreactive neurons in the cat medulla oblongata.
KITAHAMA, K., L. DENOROY, A. BEROD and M. JOUVET 197

Immunohistochemical localization of adenosine deaminase in the retina of the rat.
SENBA, E., P. E. DADDONA and J. I. NAGY 209

Development of specific antisera and a radioimmunoassay procedure for the gonadotropin-releasing hormone associated peptide (GAP) of the LHRH prohormone.
CULLER, M. D. and A. NEGRO-VILAR 219

Astrocyte responses to dopaminergic denervations by 6-hydroxydopamine and 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine as evidenced by glial fibrillary acidic protein immunohistochemistry.
STRÖMBERG, I., H. BJÖRKLUND, D. DAHL, G. JONSSON, E. SUNDSTRÖM and L. OLSON 225

Contents continued

A rapid purification of synapsin I: A neuron specific spectrin binding protein.
KREBS, K. E., I. S. ZAGON and S. R. GOODMAN 237

Rapid Communications

Prostaglandin involvement in the evoked release of D-aspartate from cerebellar mossy fiber terminals.
DORMAN, R. V., M. A. SCHWARTZ and D. M. TERRIAN 243

Neuroanatomical mapping of hypothalamic regions mediating verapamil hyper- and hypothermia in the cat.
REZVANI, AMIR H., D. B. BELESLIN and R. D. MYERS 249

***In vivo* down-regulation of rat striatal opioid receptors by chronic enkephalin.**
STEECE, K. A., F. A. DeLEON-JONES, L. R. MEYERSON, J. M. LEE, J. Z. FIELDS and R. F. RITZMANN 255

Effects of glycosylation inhibitors on the frog retina.
CHAMBERS, J. P., A. T. C. TSIN, N. Y. RAYMOND, F. G. ALDAPE and K. A. RODRIGUEZ 259

Brief Communications

Effects of glycosylation inhibitors on the frog retina.
CHAMBERS, J. P., A. T. C. TSIN, N. Y. RAYMOND, F. G. ALDAPE and K. A. RODRIGUEZ 259

Cardiovascular and drinking responses elicited by central administration of angiotensin II: Differential effects of GABA injected into the ventral tegmental area and spiperone injected into the nucleus accumbens.
JONES, D. L. 265

Effects of D-glucose anomers on sweetness taste and insulin release in man.
YAMAZAKI, M. and T. SAKAGUCHI 271

On the requirement of postural asymmetry for rotational behaviour.
KILPATRICK, I. C. 275

Salivation mediated by central M-2 muscarinic receptors in the cat.
TOMIC-BELESLIN, N. and D. B. BELESLIN 279

VOLUME 17 NUMBER 3 SEPTEMBER 1986

CONTENTS

Articles

CRF antagonist partially reverses CRF- and stress-induced effects on feeding.
KRAHN, D. D., B. A. GOSNELL, M. GRACE and A. S. LEVINE 285

Calcium-induced long-term potentiation in the hippocampal slice: Characterization of the time course and conditions.
REYMANN, K. G., H. K. MATTHIES, U. FREY, V. S. VOROBYEV and H. MATTHIES 291

Analysis of the change in number of serotonergic neurons in the chick spinal cord during embryonic development.
WALLACE, J. A., P. C. ALLGOOD, T. J. HOFFMAN, R. M. MONDRAGON and R. R. MAEZ 297

Role of ornithine decarboxylase and the polyamines in nervous system development: A review.
SLOTKIN, T. A. and J. BARTOLOME 307

Topography of projections from the medial prefrontal cortex to the amygdala in the rat.
CASSELL, M. D. and D. J. WRIGHT 321

Efferent projections of the basolateral amygdala in the opossum, *Didelphis virginiana*.
McDONALD, A. J. and J. L. CULBERSON 335

Neuronal colocalization of adenosine deaminase, monoamine oxidase, galanin and 5-hydroxytryptophan uptake in the tuberomammillary nucleus of the rat.
STAINES, WM. A., T. YAMAMOTO, P. E. DADDONA and J. I. NAGY 351

Hypothalamic neuroendocrine correlates of cutaneous burn injury in the rat: I. Scanning electron microscopy.
SCOTT, D. E., G. M. VAUGHAN and B. A. PRUITT, JR. 367

Rapid Communication

Dissociation of locomotor impairment from mydriasis evoked by clonidine injected into cat's rostral hypothalamus.
BELESLIN, D. B., A. H. REZVANI and R. D. MYERS 379

Brief Communications

Role of the flank gland in vasopressin induced scent marking behavior in the hamster.
ALBERS, H. E. and C. F. FERRIS 387

An experimental study on the effects of DMSO and indomethacin on cerebral circulation and intracranial pressure.
TUNG, H., H. E. JAMES, J. C. DRUMMOND and S. MOORE 391

Contents continued

Meeting Report

Symposium on Mechanisms of Appetite and Obesity 395

Effect of somatostatin on the vagal motor neuron in the rat.
OOMURA, Y. and Y. MIZUNO 397

FMRFamide: An endogenous peptide with marked inhibitory effects on opioid-induced feeding behavior.
KAVALIERS, M. and M. HIRST 403

Hypothalamic obesity: Comparison of radio-frequency and electrolytic lesions in male and female rats.
KING, B. M. and L. A. FROHMAN 409

The inhibition of feeding produced by direct intraintestinal infusion of glucose: Is this satiety?
McHUGH, P. R. and T. H. MORAN 415

Role of glucagon in the control of food intake in Zucker obese and lean rats.
McLAUGHLIN, C. L., R. L. GINGERICH and C. A. BAILE 419

Functional coupling between transient declines in blood glucose and feeding behavior: Temporal relationships.
CAMPFIELD, L. A. and F. J. SMITH 427

Immunoreactive beta-endorphin increases after IV glucose in obese human subjects.
GETTO, C. J., W. J. SWIFT, I. H. CARLSON and D. T. FULLERTON 435

Meal pattern analysis: Artifacts, assumptions and implications.
CASTONGUAY, T. W., L. L. KAISER and J. S. STERN 439

Comparative effects of caerulein on food intake and pancreatic secretion in dogs.
REIDELBERGER, R. D., T. J. KALOGERIS and T. E. SOLOMON 445

Body weight set point studies in weanling rats with dorsomedial hypothalamic lesions (DMNL rats).
BERNARDIS, L. L., G. McEWEN and M. KODIS 451

BRAIN RESEARCH BULLETIN

VOLUME 17 NUMBER 4 OCTOBER 1986

CONTENTS

Articles

**Serotonin neuron transplants:
Electrophysiological unit activity of intrahippocampal raphe grafts in freely moving cats.**
TRULSON, M. E., A. HOSSEINI and T. J. TRULSON 461

Centrally mediated effect of vanadate on diuresis and natriuresis in normal rats. Interaction with ouabain.
VIVAS, L. and E. CHIARAVIGLIO 469

Clinical suppression of experimental allergic encephalomyelitis by muramyl dipeptide "adjuvant."
ROOT-BERNSTEIN, R. S., F. YUROCHKO and F. C. WESTALL 473

Depletion of striatal β-phenylethylamine following dopamine but not 5-HT denervation.
GREENSHAW, A. J., A. V. JUORIO and T. V. NGUYEN 477

Comparative anatomy of the retino-hypothalamic tract in photoperiodic and non-photoperiodic rodents.
YOUNGSTROM, T. G. and A. A. NUNEZ 485

The anterior midline cortex and adaptation to stress ulcers in rats.
SULLIVAN, R. M. and P. G. HENKE 493

Contribution of the vagus nerve to angiotensin II binding sites in the canine medulla.
DIZ, D. I., K. L. BARNES and C. M. FERRARIO 497

Interaction of serotonin with somatosensory cortical neuronal responses to afferent synaptic inputs and putative neurotransmitters.
WATERHOUSE, B. D., H. C. MOISES and D. J. WOODWARD 507

**Bovine pineal antireproductive tripeptide binds to luteinizing hormone-releasing hormone:
A model for peptide modulation by sequence specific peptide interactions?**
ROOT-BERNSTEIN, R. S. and F. C. WESTALL 519

Rapid Communication

Topographic organization and collateralization of claustrocortical projections in the rat.
LI, Z. K., M. TAKADA and T. HATTORI 529

Meeting Report

Symposium on Mechanisms of Appetite and Obesity 533

Intraventricular bombesin can decrease single meal size in the baboon.
FIGLEWICZ, D. P., A. SIPOLS, D. PORTE, JR. and S. C. WOODS 535

Glucagon, satiety from feeding and liver/pancreatic interactions.
VANDERWEELE, D. A., B. L. MACRUM and R. L. OETTING 539

Glucagon satiety: Diurnal variation after hepatic branch vagotomy or intraportal alloxan.
WEATHERFORD, S. C. and S. RITTER 545

Feeding regulation by endogenous sugar acids through hypothalamic chemosensitive neurons.
OOMURA, Y. 551

Hyperprolactinemia stimulates food intake in the female rat.
MOORE, B. J., T. GERARDO-GETTENS, B. A. HORWITZ and J. S. STERN 563

Obese male mice (ob/ob) are normally sensitive to the satiating effect of CCK-8.
STROHMAYER, A. J. and G. P. SMITH 571

Effects of fenfluramine on food intake, body weight, gastric emptying and brain monoamines in Syrian hamsters.
ROWLAND, N. E. and J. CARLTON 575

CCK and other peptides modulate hypothalamic norepinephrine release in the rat: Dependence on hunger or satiety.
MYERS, R. D., H. S. SWARTZWELDER, J. M. PEINADO, T. F. LEE, J. R. HEPLER, D. M. DENBOW and J. M. R. FERRER 583

Intraduodenal infusions of fat inhibit sham feeding in Zucker rats.
GREENBERG, D., J. GIBBS and G. P. SMITH 599

D-2 selective receptor antagonists suppress sucrose sham feeding in the rat.
SCHNEIDER, L. H., J. GIBBS and G. P. SMITH 605

BRAIN RESEARCH BULLETIN

VOLUME 17 NUMBER 5 NOVEMBER 1986

CONTENTS

Meeting Report

Symposium on Mechanisms of Appetite and Obesity 613

Combined injection potentiates the satiety effects of pancreatic glucagon, cholecystokinin, and bombesin.
HINTON, V., M. ROSOFSKY, J. GRANGER and N. GEARY 615

Short-term control of feeding: Limitation of the glucostatic theory.
EVEN, P. and S. NICOLAIDIS 621

β-Carbolines characterized as benzodiazepine receptor agonists and inverse agonists produce bidirectional changes in palatable food consumption.
COOPER, S. J. 627

Demonstrating morphine's potentiating effects on sucrose-intake.
CZIRR, S. A. and L. D. REID 639

Long-term effects of lateral hypothalamic lesions on brown adipose tissue in rats.
PARK, I. R. A., J. HIMMS-HAGEN and D. V. COSCINA 643

Dietary self-selection in diabetic rats: An overview.
BELLUSH, L. L. and N. E. ROWLAND 653

Hypothalamic serotonin in the control of meal patterns and macronutrient selection.
SHOR-POSNER, G., J. A. GRINKER, C. MARINESCU, O. BROWN and S. F. LEIBOWITZ 663

Ontogeny of glucose inhibition of independent ingestion in preweanling rats.
PHIFER, C. B., J. A. BROWDE, JR. and W. G. HALL 673

Amphetamine: Effects on meal patterns and macronutrient selection.
LEIBOWITZ, S. F., G. SHOR-POSNER, C. MACLOW and J. A. GRINKER .. 681

Meeting Report

Multineuronal Control of the Intermediate Lobe of the Pituitary 691

Introduction 693

GABA and dopamine act directly on melanotropes of *Xenopus* to inhibit MSH secretion.
VERBURG-VAN KEMENADE, B. M. L., B. G. JENKS and A. G. J. DRIESSEN 697

Autoradiographic localization of β-adrenergic receptors in the rabbit pituitary.
SCHIMCHOWITSCH, S., L. M. WILLIAMS and G. PELLETIER 705

Decreased GABAergic innervation of the pituitary intermediate lobe after rostral hypothalamic cuts.
TAPPAZ, M. L., I. KAKUCSKA, L. PAUT and G. B. MAKARA 711

Contents continued

GABA-ergic control of α-melanocyte-stimulating hormone (α-MSH) release by frog neurointermediate lobe *in vitro*.
ADJEROUD, S., M. C. TONON, M. LAMACZ, E. LENEVEU, M. E. STOECKEL, M. L. TAPPAZ, L. CAZIN, J. M. DANGER, C. BERNARD and H. VAUDRY 717

Ionic conductances related to GABA action on secretory and biosynthetic activity of pars intermedia cells.
TALEB, O., J. PH. LOEFFLER, J. TROUSLARD, B. A. DEMENEIX, N. KLEY, V. HOLLT and P. FELTZ 725

Erratum 731

Announcements 733

BRAIN RESEARCH BULLETIN

VOLUME 17 NUMBER 6 DECEMBER 1986

CONTENTS

Articles

The kinase C substrate protein B-50 and axonal regeneration.
VERHAAGEN, J., C. O. M. VAN HOOFF, P. M. EDWARDS, P. N. E. DE GRAAN, A. B. OESTREICHER, P. SCHOTMAN, F. G. I. JENNEKENS and W. H. GISPEN 737

Electrophysiology of limbic forebrain and paraventricular nucleus connections.
SAPHIER, D. and S. FELDMAN 743

Frontal cortex stimulation evoked neostriatal potentials in rats: Intracellular and extracellular analysis.
RYAN, L. J., J. M. TEPPER, S. J. YOUNG and P. M. GROVES 751

Effect of locus coeruleus and periventricular gray substance lesions on bright light-induced persistent estrous.
SOLANO-FLORES, L. P., O. A. DONATTI-ALBARRÁN and R. GUEVARA-AGUILAR 759

Binding sites for atrial natriuretic factor (ANF) in brain: Alterations in Brattleboro rats.
McCARTY, R. and L. M. PLUNKETT 767

Oscillatory behavior in inferior olive neurons: Mechanism, modulation, cell aggregates.
BENARDO, L. S. and R. E. FOSTER 773

The inferior olivary complex of guinea pig: Cytoarchitecture and cellular morphology.
FOSTER, R. E. and B. E. PETERSON 785

Raphe dorsalis-spinal cord cografts *in oculo:* Electrophysiological evidence for an excitatory serotonergic innervation of transplanted spinal neurons.
HENSCHEN, A., M. R. PALMER and L. OLSON 801

Survival and growth of fetal catecholamine neurons transplanted into primate brain.
SLADEK, J. R., JR., T. J. COLLIER, S. N. HABER, R. H. ROTH and D. E. REDMOND, JR. 809

Rapid Communications

Evidence for a differential innervation of the spinal motor columns by substance P and serotonin in the fetal monkey.
BOWKER, R. M. 819

Adipsia-polydipsia induced by simultaneous lesion of the medioventral septum and anteroventral third ventricle area in the rat.
MONTES, R., C. GARCIA DEL RIO, J. BOLANOS and F. MORA 823

Contents continued

Brief Communication

Binding of Tyr-MIF-1 to isolated brain capillaries.
PRETORIUS, H. T., A. J. KASTIN and W. A. BANKS 829

Meeting Report

Symposium on Mechanisms of Appetite and Obesity 833

Liquid sucrose and fructose intake in male and female liver denervated rats.
BELLINGER, L. L. and F. E. WILLIAMS 835

Neuron activity in and adjacent to the dorsal amygdala of monkey during operant feeding behavior.
NISHIJO, H., T. ONO, K. NAKAMURA, M. KAWABATA and K. YAMATANI 847

Integrated metabolic control of food intake.
FRIEDMAN, M. I., M. G. TORDOFF and I. RAMIREZ 855

Large changes in food intake in diabetic rats fed high-fat and low-fat diets.
KOOPMANS, H. S. and F. X. PI-SUNYER 861

Regulation of [^{3}H]mazindol binding to subhypothalamic areas: Involvement in glucoprivic feeding.
ANGEL, I., A. KISS, J. A. STIVERS, L. SKIRBOLL, J. N. CRAWLEY and S. M. PAUL 873

Neuronal responses in monkey lateral hypothalamus during operant feeding behavior.
FUKUDA, M., T. ONO, H. NISHINO and K. NAKAMURA 879

Long-term effects of diethylstilbestrol (DES) on genetically obese and non-obese female Zucker rats.
FINKELSTEIN, J. A. 885

Impact of food deprivation on α_1- and α_2-noradrenergic receptors in the paraventricular nucleus and other hypothalamic areas.
JHANWAR-UNIYAL, M. and S. F LEIBOWITZ 889

Index to Volume 17 897